

CHRONICLE

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Experiments Revealed

New Tests on Relation Of Smoking and Cancer

NEW YORK, Nov. 3 (UPI) — A series of scientific experiments have attacked a conspicuous weakness in the theory that cigarette smoking is a cause of lung cancer. The experiments showed how smoking might be a cause.

Air passages from nose to the depths of the lungs are lined with ciliated cells. These cells vibrate—they beat. They form dancing surfaces, as it were, and foreign substances are bounced along in one direction—outward. This is how the body keeps the air passages clean.

Therefore, if the tars of cigarette smoke do contain cancer-causing substances, how could they accumulate in the lining cells of lungs? You'd think the bouncing ciliated cells would prevent that. Dr. John J. Ballenger of Northwestern University, Evanston, Ill., attacked the question.

A CULTURE

He scraped ciliated cells out of the throats of young children. These were not likely to have been contaminated by unnatural living. These cells he cultured in a nutritional solution in sealed but transparent chambers.

He then bubbled cigarette smoke through these chambers. The smoke of only two cigarettes was enough to stop the rotational movement of the aggregate of ciliated cells within 5 to 28 minutes, he reported to the New England Journal of Medicine. These results he got from 12 consecutive experiments.

Ballenger drew conclusions which are bound to be attacked by some colleagues because there was no proof that ciliated cells in laboratory solution behave precisely the way ciliated cells behave in the body when moistened by natural body fluids.

PROOF DIFFICULT

That proof would be extremely hard if not impossible to come by because of the difficulty of experiment-

ing with ciliated cells while they are still serving an organism and its organs. Previous detached experiments were with those of rats and other laboratory animals.

Ballenger went no further than to suggest smoke-de-ranged ciliated cells "is one of the mechanisms whereby tars may collect in the lower respiratory tract and come into contact with the mucosa. If the person is a heavy and persistent smoker the tars may be assumed to stay in contact with the bronchial mucosa for long periods.

"It seems likely that the decreased efficiency of the ciliary mechanism caused by smoke plays a part in the productive cough noted by smokers. If the cilia do not keep the airway clean, the blanket of mucus containing foreign material collects and eventually initiates the cough reflex."

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